291 Lin Programming HW #1 Key

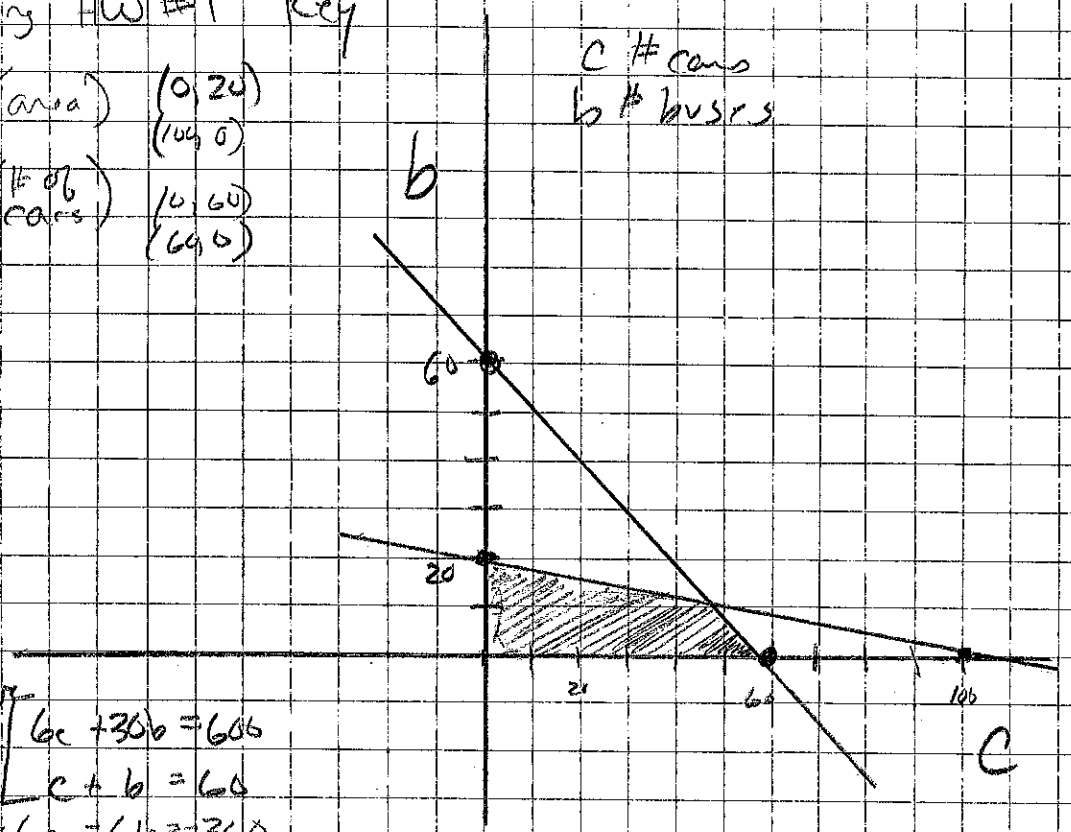
1. $6c + 30b \leq 600$ (area) (0, 20) (100, 0)

$c + b \leq 60$ (# of cars) (0, 60) (60, 0)

$c \geq 0$

$b \geq 0$

c # cars
b # buses



$P = 3c + 8b$	
0, 0	$0
0, 20	$160
60, 0	$180
50, 10	150 + 80 = $230

solve: $6c + 30b = 600$, $c + b = 60$

$-6c - 6b = -360$

$24b = 240$

$b = 10$

50 cars + 10 buses for $230

2. h # hockey
f # figure

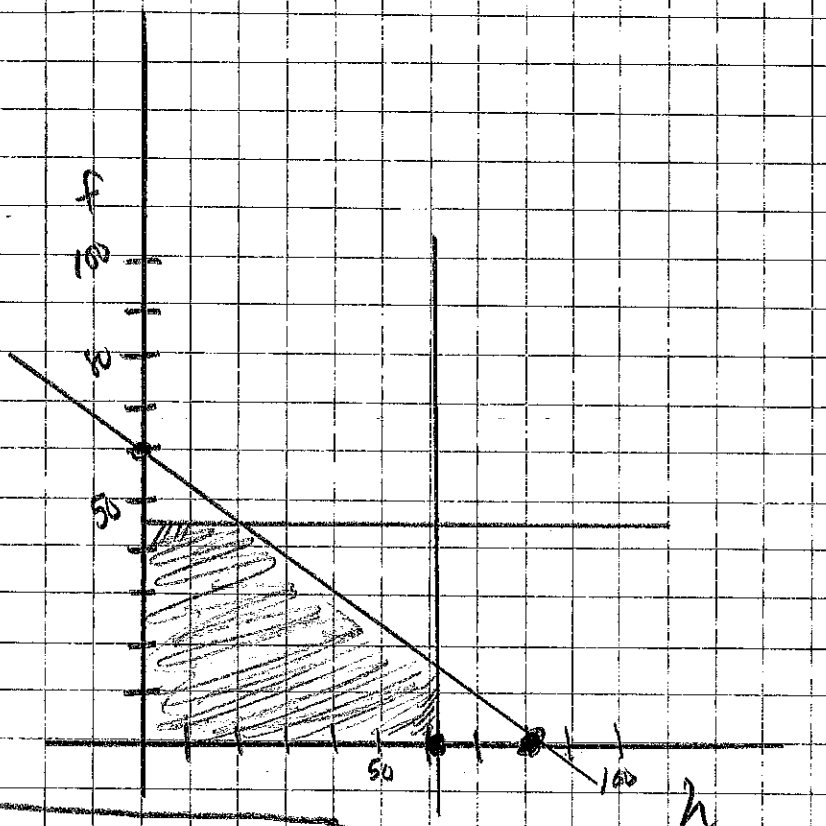
$h \leq 60$ (amt each skate)

$f \leq 45$

$3h + 4f \leq 240$ (labor) (0, 60) (80, 0)

$h \geq 0$

$f \geq 0$



$P = 12h + 18f$

0, 0	$0
60, 0	$720
0, 48	$810
20, 45	240 + 810 = $1050
60, 15	720 + 270 = $990

20 hockey skates, 45 figure skates, $1050 max profit